

REMARKS

Responsive to the Office Action dated August 24, 2004, Applicants hereby amend Claims 1, 5, 6, 9 and 12-17 to further highlight the differences between claimed invention and the applied prior art patents.

To date, it is believed that the scope of Applicants' claims have not been properly interpreted, and Applicants hereby elect to amend the claims in a manner which does not significantly alter the scope but uses alternative language which more clearly highlights the differences between the claimed invention and the applied prior art.

All of independent Claims 1, 5, 6 and 15-17 generally define a laminate having an insulating layer and a metallic layer and include the step of adding a wiring part to the insulating layer by the semi-additive method to add a new layer to the initial laminate. As best understood, the rejection seemed to state that (1) taking an existing metallic layer of a three-layer laminate in Bennin and (2) removing material to construct a trace is considered to be the same as Applicants' addition of a wiring part through the semi-additive method. This is believed to be an incorrect interpretation of Bennin. While all of the independent claims are believed to distinguish over the combination of references in their prior form, Applicants hereby amend independent Claims 1, 5, 6, and 15-17 to further highlight the deficiencies of Bennin.

More particularly, independent Claims 1, 5 and 6 are amended to now define the step of: "depositing conductive material onto said exposed face of said insulating layer by the semi-additive method in a pattern which partially covers a portion of said exposed face to add a third layer on said initial two-layer laminate and thereby define a resulting three-layer laminate wherein said pattern of said conductive material defines a wiring part for said wireless suspension blank".

Claims 15-17 define the similar step of: "depositing conductive wiring material onto said exposed surface of said insulating layer by the semi-additive method in a pattern which partially covers a portion of said exposed surface to add an additional layer to said initial multi-layer laminate wherein said pattern of said conductive wiring material defines a wiring part for said wireless suspension blank".

As discussed in further detail herein, this specific semi-additive step as it is defined in the respective independent claims is not disclosed, taught or suggested by Bennin, and Bennin further would not be modified to use the semi-additive method to construct a wiring part.

As to Bennin, Bennin clearly requires an initial three-layer laminate which includes a third layer 70 of conductive material which is adhered to the entire insulating layer 90. As seen in Figure 3, both faces of the insulative second layer 90 are completely covered by the respective first and third layers. The insulating layer has no "exposed" surface to which conductive material is deposited in a pattern which only partially covers the insulating layer as defined in Applicants' claims.

The insulating layer 90 has no exposed surface and is completely covered by the conductive third layer 70. The conductive third layer 70 pre-exists in the laminate and must pre-exist as part of the initial three-layer laminate, since the insulative second layer 90 supports the metal layers 50 and 70 throughout the etching process to allow for formation of fragile geometries. Since the conductive third layer 70 completely covers the insulating layer, electrical traces may only be formed in the three-layer laminate of Bennin through material removal. Applicants have previously made this point and will continue to make this point since the semi-additive method disclosed in Horiuchi would not be used to form the wiring part in Bennin because the semi-additive method, by definition, involves adding conductive material to a surface

and does not involve removing conductive material from an existing laminate layer.

Applicants do recognize that Bennin does reference plating in column 8, lines 48-55. However, with respect to the third layer 70, this disclosure as to plating merely discloses that plating such as nickel, gold, silver, tin etc. can be applied on "connector sites" of the traces of the third layer 70, such as the opposite ends 73, 74 of the traces 71. The last sentence of this paragraph does say that "plating or other passivation" is also useful to protect the entire third layer 70 from corrosion. Notably, this is believed to disclose that a protective passivation layer may be provided to the traces and still requires the application of a layer to the existing traces after the traces already have been formed. This paragraph does not disclose plating a portion of an insulating layer in a pattern which forms a trace, and it only discloses applying plating to a trace which already exists.

It is not entirely clear from the Office Action as to how this plating disclosure is being applied. There is a statement on Page 6 that it would be obvious to "plate a wiring part by the semi-additive method as taught by Horiuchi". Notwithstanding the fact that column 8 appears to disclose only "electroplating" and not use of the semi-additive method, the suggestion by the Examiner only applies to plating the existing trace and not actually forming the trace onto an insulating layer. From paragraph 9 of the Office Action, it appears that the objection is citing Horiuchi as disclosing use of the semi-additive method only for plating, and not for actual formation of the trace which still would be formed by etching in accord with Bennin. If such is the case, it is not seen how this disclosure actually satisfies or discloses the claimed method defined in Applicants' independent claims. These independent claims define the semi-additive method as forming a wiring part and are not directed to plating the wiring part with the semi-additive method

In further review of Applicants' position, Applicants again reiterate that Bennin only discloses providing three initial layers wherein the third conductive layer 70 is already formed in a rectangular shape (as seen in Figure 3 of Bennin) before any of the processing steps are conducted to form the traces and other components of the Bennin structure. Since the conductive material layer 70 is already present in the initial laminate of Bennin, the wiring part or electrical traces may only be formed by material removal.

As to this specific argument, paragraph 8 of the Office Action discusses this position as though it was defining claim terminology of Applicants' claimed invention. This is not the case. Applicants' argument is specifically directed to the actual disclosure of the prior art reference, namely Bennin, and what it fairly teaches to the skilled artisan. Therefore, the citation to case law as to whether limitations from a Specification may be read into the claims is believed irrelevant to the present argument.

Rather, Applicants are interpreting Bennin and its disclosure and all facets of this disclosure must be considered by the skilled artisan. Since Bennin can only reasonably be interpreted as requiring material removal of the conductive layer 70 to form a conductive trace, this would clearly teach away from a distinctly different method, namely the semi-additive method, which requires the actual addition of material to a substrate. Since the conductive material already exists on the insulating layer 90 in Bennin, the semi-additive method would not be used to form the conductive traces invented.

While the rejection seems to argue that Horiuchi would be used to plate the wiring parts, Applicants are not claiming the semi-additive method as being used to plate a wiring part in the independent claims but is only defining this semi-additive method as actually forming the wiring part on the insulating layer. The difference between forming a trace and

plating a trace is a significant difference which apparently is being overlooked in formulating the rejection.

More particularly, Claim 1 defines the insulating layer as having an exposed face wherein the method "deposits" conductive material onto the exposed face of the insulating layer. This depositing of the conductive material is performed by the semi-additive method which has a technical meaning that completely differs from etching which etching process involves material removal. Further, this conductive material is deposited in a "pattern" which partially covers a portion of the exposed face of the insulating layer which pattern of conductive material defines a wiring part. This therefore is not satisfied by Bennin which has the entire face of the insulating material completely covered by the third conductive layer which thereby requires removal of the conductive material.

As can be seen, Bennin does not deposit conductive material in a pattern on the insulating layer. Bennin only has an initial conductive layer which completely covers the insulating layer and then has to remove excess material therefrom.

Based upon the foregoing, Bennin does not disclose, teach or suggest depositing conductive material in a pattern on the insulating layer. Bennin does not disclose using the semi-additive method to deposit this material.

Additionally, Applicants also note that dependent Claim 12 defines a fourth step of plating the conductive material of the wiring part with a layer of a plating material. This clearly indicates that plating a wiring part is a completely separate step from depositing conductive material on an insulating layer to form a wiring part. Further, this material depositing serves to add a third layer on the initial two-layer laminate which thereby defines a resulting three-layer laminate. Thus, shaping an existing layer by etching cannot be described as adding a layer since by definition, shaping a layer by etching already acts upon a layer which

pre-exists. Hence, when properly interpreting the disclosure of Bennin, this disclosure clearly does not and cannot reasonably be characterized as adding a third layer to an initial two-layer laminate.

Further, the pattern of conductive material "partially covers" a portion of the exposed face. Bennin does not disclose this claim language since the insulating layer is not exposed and the conductive traces of the third layer 70 do not partially cover an exposed face since the insulating layer of Bennin has no exposed face.

Applicants continue to reiterate and will reiterate on appeal if necessary, that the entire language of Claim 1 must be read in its entirety and the entire meaning of the claim language must be properly interpreted.

For the foregoing reasons, all of Claims 1-5 and 12 are believed in condition for allowance.

With respect to independent Claims 6 and 9, these claims also include claim language which is identical to that discussed above relative to Claim 1 and as such, all of Claims 6-11, 13 and 14 are also in condition for allowance.

As to independent Claim 15, this claim defines a similar method step as discussed above. Specifically, Claim 15 defines a step of depositing conductive wiring material onto the exposed surface of the insulating layer by the semi-additive method in a pattern which partially covers a portion of the exposed surface. As discussed above, Bennin and Horiuchi whether considered alone or in combination do not disclose, teach or suggest depositing a conductive wiring material onto the exposed surface of the insulating layer in a pattern which pattern defines a wiring part. Bennin only discloses providing a pre-existing conductive layer which entirely covers the insulating layer.

The applied prior art does not disclose, teach or suggest depositing this conductive wiring material by the semi-additive method. Bennin already has a pre-existing conductive

layer which therefore requires material removal of excess conductive material.

Bennin does not have an exposed surface of the insulating layer which is only partially covered by the pattern of conductive material. Further, this depositing of the conductive wiring material adds an additional layer to the initial multi-layer laminate. The etching step of Bennin does not add a layer since the conductive material layer already exists.

The plating step of Bennin does not satisfy the claim language of Claim 15. Notably, plating is only applied to the wiring part after the wiring part is formed by etching. Thus, the plating is applied directly to the wiring part and does not constitute depositing of a conductive wiring material onto an exposed surface of an insulating layer in a pattern that defines the wiring part. The plating is provided in no such pattern. Plating only is applied to the wiring part after the wiring part is formed. Hence, the plating disclosed in Bennin completely differs from Applicants' method step of depositing the conductive wiring material onto the insulating layer in a pattern. Thus, even if the semi-additive method of Horiuchi was used for plating, this plating step still does not satisfy Applicants' claim language.

For this reason, Claim 15 is allowable as well as Claims 16 and 17 which are amended to include the same language as Claim 15. Accordingly, all of Claims 1-17 are in condition for allowance.

As an additional matter with respect to Horiuchi, the second paragraph on Page 6 of the Office Action includes the statement "Horiuchi teaches... plating a wiring part by the semi-additive method (column 6, lines 11-17)." This characterization of Horiuchi is believed inaccurate. Column 6, lines 11-17 of Horiuchi references formation of a wiring pattern 17. This wiring pattern 17 is not the same as applying plating to an existing wiring part, and completely

differs from the plating described in column 8, lines 48-55 of Bennin.

Despite the differences between forming of the wiring pattern 17 of Horiuchi and plating a pre-existing wiring part of Bennin the statement "plating a wiring part" implies that these two different process steps of Bennin and Horiuchi are the same, which is in fact, not the case. Notably, Claims 12-14 of the present application relate to the plating step but these do not define one way or the other whether the claimed plating step is performed by the semi-additive method. Therefore, since the plating step of Claims 12-14 differs from formation of the wiring part in independent Claims 1, 6 and 9, the mere allegation that Horiuchi might teach using the semi-additive method to perform plating of a pre-existing wiring part does not cure the deficiency that Horiuchi does not disclose, teach or suggest using the semi-additive method to form the conductive trace of Bennin which conductive trace of Bennin can only be formed by material removal such as etching.


With respect to the comments provided in paragraph 7 of the Office Action, these comments are believed to be based upon an interpretation of the claims which disregards the common dictionary definition of the term "adding". However, these arguments are now believed moot in view of the further amendments to the claims which clearly define that material is deposited on an exposed surface on the insulating layer.

As to the comments in paragraph 9 of the Office Action, this paragraph includes a statement that "Bennin teaches plating steps for trace addition". It is noted that the plating steps of Bennin are not creating additional traces, but only are providing an additional layer of material on a pre-existing trace. Hence, Applicants disagree that Bennin does in fact teach plating steps for trace addition.

Based upon the foregoing, further and favorable consideration of this application. The Applicants' undersigned representative will follow up in the near future to continue discussion of the claims and the prior art in a

further Interview in an effort to avoid the necessity of an Appeal.

Respectfully submitted,


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